3:Gt. Brit., Colonial Office G-3 (1938) 1940 MM1 Aden MM1

315 premises were disconnected, of which 100 were eventually reconnected. 312 365

(7) *Other Supplies.*—3,814,000 gallons of bore water were supplied free for flushing sewers and 120,000 gallons for fire fighting and practices.

(8) *Water Analysis—Chlorination.*—Three bacteriological and one chemical analyses of both the raw and the chlorinated water were carried out during the year. The bacteriological analyses all showed very satisfactory results in respect of all the samples for drinking water. 361

The chemical analysis showed that the water was very similar chemically to that tested in 1935 and 1937. It is noteworthy that the sodium chloride (salt) content has not increased.

The whole of the water supply to the Fortress was automatically chlorinated at Isthmus, the dose being ¼ part per million by weight. The water at Sheikh Othman was also safeguarded by placing ¼ lb. of bleaching powder in each tank every morning.

VI.—PRODUCTION

Veterinary

Condition of Live Stock and Meat.—The condition of the live stock from the hinterland was not up to the usual standard, due to cattle being brought in from famine stricken areas. The condition of the live stock from British Somaliland, particularly sheep and goats, was very good. The quality of mutton was 1st class and beef 2nd class. 231 439

Imports from British Somaliland and Djibouti :—72,180 sheep and goats, 157 oxen, 5 cows, 6 ponies, 2 mules.

Imports from Arabian and Red Sea Ports :—1,519 sheep and goats, 5 milk cows, 15 horned cattle, 12 calves, 3 gazelles.

Imports from the hinterland :—1,229 horned cattle, 617 large calves, 373 milk cows, 8,293 goats, kids and sheep, 34 camels, 15 donkeys, 1 pony.

Export from Aden :—3,748 sheep and goats, 20 horned cattle, 16 large calves, 32 camels, 1 donkey, 19 monkeys.

Bovine Contagious Disease.—Rinderpest accounted for 224 deaths among milk cattle and calves of Crater and Tawahi. 232

Preventive Measures.—The epidemic was controlled by the following precautionary measures being taken :—

1. All infected animals were segregated.
2. Stables were regularly disinfected.
3. Cattle were inoculated with anti-Rinderpest serum.
4. Carcasses were incinerated and the movement of horned cattle was controlled.

2 Gt. Brit., Colonial Office G-3 (1938) 1940 MM1 Aden MM1

232 *Equine Contagious Disease.*—In February, sudden deaths amongst the hackney carriage horses occurred, and, as a result of post-mortems, African horse sickness was suspected. By taking prompt precautionary measures, the disease was confined to Crater. Nine deaths were recorded.

Three segregation camps for cattle are being constructed, two at Sheikh Othman and one at Maala.

Fisheries

226 Fishing is, generally speaking, good, but the quantity of fish caught is greatly influenced by the movements of the different species of sardinella on which the large species feed. Shark, barracuda, horse-mackerel, sea-perch, dolphins, the smaller members of the tunny family, rock cod soles, and mullet are the principal edible fish. Sword or sail fish make their appearance at certain seasons of the year, but are not easily saleable for human consumption. Crabs and crawfish are to be had at all seasons, and oysters are available in the winter months. The fishermen are a very industrious people and employ various kinds of nets as well as hand-lines in their work. The nets used are of the stationary, circular throwing, and drag varieties, the latter being used from the shore. In addition a special net is operated from boats working in pairs during the monsoon period. Throwing nets for mullet, mackerel and a form of whitebait are also in use. The catch is at times greater than the requirements for local consumption, and the surplus is salted for export. Shark is almost invariably treated in this manner, and during some seasons large quantities are dried. Whitebait is exported.

433 251 439

The fishermen are subject to certain rules which forbid trawls and limit the size of nets, and in addition they defer to the judgment of their elected Akils in matters of fishing custom.

228 Licences to dive for pearls both in the harbour and in the waters of Perim are obligatory, but no licences are required to fish.

Salt

258 A salt work was first constructed by the Italian firm of Messrs. Gaustalla and Company (now styled The Aden Salt Works) in the year 1885, and it carries on a profitable business in salt production at Sheikh Othman. This was followed by the salt work constructed in 1909 by the Bombay firm of Messrs. Abdullabhoy and Joomabhoy Lalljee and Company. Two more salt works have since been constructed by Messrs. Hajeebhoy Laljee and Company and the Little Aden Salt Industrial Company in May, 1923, and October, 1927, respectively, and they continue to work successfully. The total quantity of salt exported to India and other places during the last year was 230,379 tons. The monopoly of salt for local consumption is in the hands of Government, who have licensed certain pits to Arabs at Sheikh Othman.

439 655

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Water Supply.

The water supply is obtained from six bore-wells situated near the village of Sheikh Othman. The supply for the civil population is pumped into two tanks each of 100,000 gallons capacity, and from these tanks the supply gravitates through a 15-in. main to a storage reservoir of 400,000 gallons capacity at the Isthmus. 312

There is a pump-house at the Isthmus, and the water is drawn from the storage reservoir and chlorinated automatically by a venturi-operated "chloronome" before being pumped to Crater and Tawahi. Some 2,000 houses have been connected to the main water, and fire hydrants have been sited at intervals throughout the system. There are filling-stations for camel-carts at Crater, Tawahi and Sheikh Othman, and by this means water is distributed to houses which have so far not been connected to the main supply. The water is of exceptional bacteriological purity, although rather hard.

VI.—PRODUCTION.

Veterinary.

Cattle, sheep and goats are imported from British Somaliland, Arabian and Red Sea ports and from the Yemen and Aden Protectorate for consumption in the Colony. As an indication of the quantity imported annually it is of interest to give the figures of imports from the 1st April, 1937, to the 31st December, 1937. 439

	Cattle.	*Sheep and Goats.*
From British Somaliland and Arabian and Red Sea ports	Nil	49,772
The Yemen and the Aden Protectorate	2,129	6,369

Of the total imports, only 842 sheep and 26 milk cows were re-exported.

Rinderpest.—There was an outbreak among the milk cows in November and out of over 100 cows 36 died. The cattle were treated by inoculation, and quarantine restrictions were imposed. 232

Fisheries.

The fishing is, generally speaking, good, but the quantity is greatly influenced by the movements of the different species of sardinella on which the large species feed. Shark, barracuda, horse-mackerel, sea-perch, dolphins, the smaller members of the tunny family, rock cod soles, and mullet are the principal edible fish. Sword or sail fish make their appearance at certain seasons of the year but are not easily saleable for human consumption. Crabs and crawfish are to be had at all seasons, and oysters are available in the winter months. The fishermen are a very industrious people and employ various kinds of nets as well as hand-lines in their work. The nets used are of the stationary, circular throwing, and drag varieties, the latter being used from the shore. In addition a special net is operated from boats working in pairs during the monsoon period. Throwing 226

63:Simmons et al G-5 (296)-1951) 1954
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bis snails have been described from some of the affected foci.

ANCYLOSTOMIASIS. Hookworm infection occurs in Lahej and a few agricultural centers in Western Aden Protectorate. *Necator americanus* has been identified in the cases treated at the Civil Hospital in Aden.[20]

OTHER HELMINTH INFECTIONS. Infections with one or more types of intestinal worms are prevalent, particularly among the peoples of the Protectorate. Ascariasis is widespread. Trichuriasis and, to a lesser extent, enterobiasis are common. Hydatid disease is reported among individuals from the Colony and from the interior. Infection with the beef tapeworm, *Taenia saginata*, is enzootic among the cattle in the tribal districts, and human infections are undoubtedly frequent. Cases are occasionally encountered among immigrant families in the Colony. The pork tapeworm, *T. solium*, is rare, but infections are sometimes seen in the Aden hospitals.

Other Infections. *Brucella melitensis* is enzootic among the goats in this area, and Malta fever is diagnosed from time to time in the Colony hospitals and dispensaries.

DISEASES SPREAD CHIEFLY THROUGH THE RESPIRATORY TRACT

Tuberculosis. Tuberculosis is one of the most prominent diseases affecting the inhabitants of southern Arabia, but no precise information is available, except for Aden Colony. The high degree of undernutrition and overcrowding, and the low standards of personal hygiene and sanitation prevailing among large sections of the population, favor the spread of the infection. The disease is probably prevalent among the women who are confined to close quarters by the *purdah* system and among the young children in close contact with them. In a small tuberculin test survey covering 95 Aden township schoolboys of 7 to 12 years of age, in 1945,[3] positive reactions were obtained in 56 per cent—a rate which ranks high among those usually found in

officers. Special delousing stations were established along the 3 main trade routes from Yemen to guard against the development of new foci.

The prevalence of the infection diminished during the summer months, but sporadic outbreaks were again reported in the winter of 1944-45. Early in 1945, a series of permanent dispensaries was organized in Western Aden Protectorate, and the tribal dressers in charge were trained to undertake mass dusting of the populace with DDT powder in the event of further epidemics. No outbreaks of typhus have been reported from the Protectorate since 1945, although the disease has continued to smolder in Yemen.

Murine typhus is probably endemic. Suspected cases have been observed in Aden hospitals from time to time, but the diagnosis has not been confirmed by laboratory diagnosis.

Plague. Six outbreaks of plague have been recorded from the Colony within the present century—in 1899-1900, 1903-04, 1904-05, 1913-14, 1917-18 and 1927-28. The most serious epidemics were those of 1904-05, involving 2,299 known cases, and of 1927-28, with 1,494 cases and a fatality rate of 74 per cent. In each outbreak the initial cases were detected among dock laborers employed in moving cargo or in loading or unloading coal. Since evidence of a preliminary rat epizootic was lacking, the local authorities concluded that the disease had been introduced by infected workers or by individuals carrying infected fleas. It was considered probable that the rat infection was secondary to the human. The morbidity rates almost invariably reached a peak in February or March, and declined with the onset of hot weather. No plague has been reported from the Colony since 1928, but the danger of its importation by means of dhow traffic from endemic ports in Africa and the East is always present. The Medical and Health Department carries on an active rat control program, and examines significant numbers of captured rats each